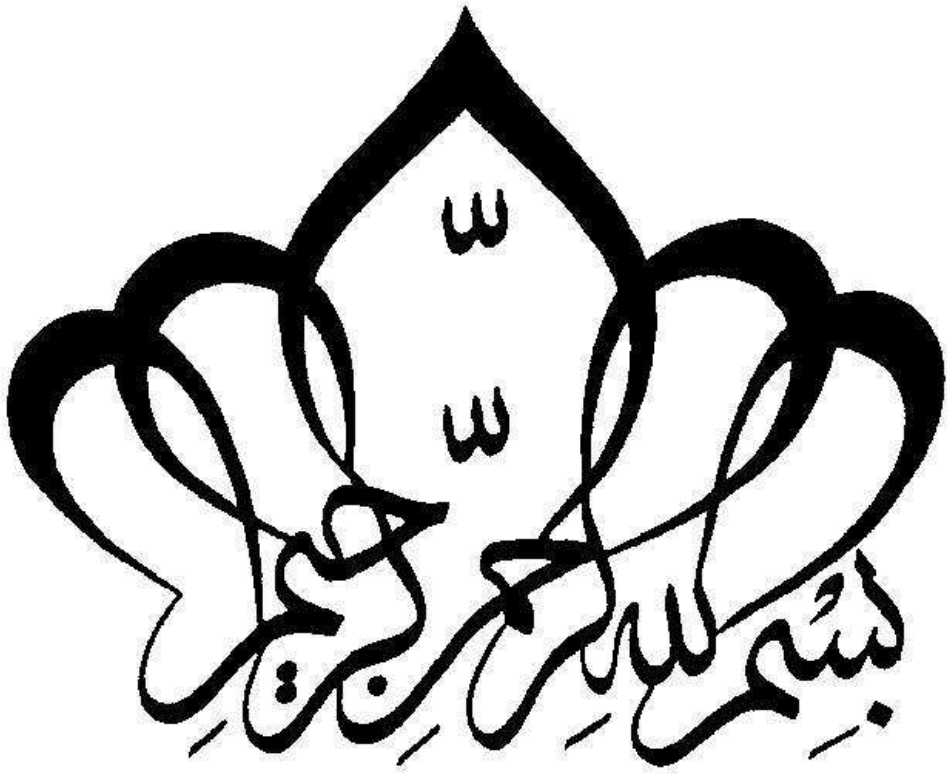


VISIT...

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قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

إهداء

للكل آية من كتاب الله حفظناها ولكل معلومة قرأناها ونسيناها لعل الله يحمينا من النسيان ويروها إلينا
للكل شخص وعونا له في ظهرك الغيب لعل الله أن يستجيب دعائنا
للكل مريض قرأ له ما أله لعل الله يشفيه ويعير إليه صحته وعافيته
للكل لحظة تألم بها أحببنا لعل الله لا يريهم الألم ولا يضييهم مرة أخرى
للكل موقف اجتجت به عيناى فلم تلبيانى لعل الله لا يضرنى بهما في حياتي
للكل حاتم صاحب أهراف ومباوى لعل الله يحقق له مقاصده حتى يرضيه ويرضى عنه
للكل مجتهد لعل الله يجعل له من التوفيق أوفر حظ ونصيب ويهون له الأسباب كلها من حيث لا يدري من غير ضراء مضرة ولا فتنة مضلة
للكل من فقر شيئا في الحياة لعل الله يعيره إليه أو يعوضه بما يسعده
للكل شخص ابتعدنا عنه لعل الله يجمعه بمن هم أفضل منا
وأخيرا وليس آخرا لأهلنا لعل الله يجعلها لهم صرقة جارية ترو إليهم قليلا من فضلهم علينا وتكون سببا يلم شملنا تحت سقف واحد بعد أن
هجرتنا الحروب والمصائب

يقول أحد الصالحين

إِذَا رَأَيْتَ أَنَّ اللَّهَ وَفَقَكَ لِإِخْوَةِ تَعِينِكَ عَلَى الْخَيْرِ.. فَأَعْلَمْ أَنَّ اللَّهَ يَرِيدُ بِكَ خَيْرًا !! وَإِذَا وَفَقَكَ لِلدُّعَاءِ.. فَأَعْلَمْ أَنَّ اللَّهَ يَرِيدُ أَنْ يُعْطِيَكَ !! وَإِذَا
وَفَقَكَ لِقَضَاءِ حَوَائِجِ النَّاسِ فَأَعْلَمْ أَنَّ لَكَ يَتَخَلَّى عَنْكَ !! وَإِذَا وَفَقَكَ لِلزُّكْرِ.. فَأَعْلَمْ أَنَّكَ مُحِبٌّ !!.. وَإِذَا أَحْبَبَّكَ أَحَدٌ.. وَنَصَرَكَ.. وَأَيَّرَكَ..
وَأُسْتَجَابَ لِدُعَائِكَ !!

This issue of **MRCPPART1 MADE EASY 2017** contains the following:

- Full topic note.
- Around 2600 MCQs from **PM 2017 BANK** covering 14 chapter in internal medicine
- External links for the related guidelines (such as NICE, SIGN, RCP ...etc).
- Comments with illustrative pictures and links to external media.
- Most Recommended QBank for MRCP Part 1, Arab Board, Jordanian Board and other internal medicine assessment exams.

Please Note that

Each chapter begins with notes section. These notes are repeated under the Questions in the website. In these collections the notes are not repeated under each question except in some to avoid unnecessary repetition. For clarity and convenience the title of the related note is only mentioned after the comments in case the reader want to refer back to the respective note in the notes section.

The illustration below is to show and Example

☐	Minimal change disease
☐	Post-streptococcal glomerulonephritis
☐	Goodpasture's syndrome

Goodpasture's syndrome

- IgG deposits on renal biopsy
- anti-GBM antibodies

• These changes are characteristic of Goodpasture's syndrome.

[Discuss and give feedback](#)

Goodpasture's syndrome 

Comment of the Q

title of the note in case the reader want to refer back to the notes sections

MRCPPART1 MADE EASY 2017

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إعداد وتنسيق

M. HABAYEB

**Msc Internal. Medicine
Cairo University**

&

A. MURAD

لا تنسونا من صالح دعائكم

ما كان من خطأ فمن أنفسنا وما كان من توفيق فمن الله

تم بحمد الله وتوفيقه ومنه

جعل الله عملنا متقبلاً خالصاً لوجهه الكريم

Reference ranges

Reference ranges vary according to individual labs. All values are for adults unless otherwise stated

Full blood count

Haemoglobin	Men: 13.5-18 g/dl Women: 11.5-16 g/dl
Mean cell volume	82-100 fl
Platelets	150-400 * 10 ⁹ /l
White blood cells	4-11 * 10 ⁹ /l

Urea and electrolytes

Sodium	135-145 mmol/l
Potassium	3.5 - 5.0 mmol/l
Urea	2.0-7 mmol/l
Creatinine	55-120 umol/l
Bicarbonate	22-28 mmol/l
Chloride	95-105 mmol/l

Liver function tests

Bilirubin	3-17 umol/l
Alanine transferase (ALT)	3-40 iu/l
Aspartate transaminase (AST)	3-30 iu/l
Alkaline phosphatase (ALP)	30-100 umol/l
Gamma glutamyl transferase (γGT)	8-60 u/l
Albumin	35-50 g/l
Total protein	60-80 g/l

Other haematology

Erythrocyte sedimentation rate (ESR)	Men: < (age / 2) mm/hr Women: < ((age + 10) / 2) mm/hr
Prothrombin time (PT)	10-14 secs

Activated partial thromboplastin time (APTT)	25-35 secs
Ferritin	20-230 ng/ml
Vitamin B12	200-900 ng/l
Folate	3.0 nmol/l
Reticulocytes	0.5-1.5%
D-Dimer	< 400 ng/ml

Other biochemistry

Calcium	2.1-2.6 mmol/l
Phosphate	0.8-1.4 mmol/l
CRP	< 10 mg/l
Thyroid stimulating hormone (TSH)	0.5-5.5 mu/l
Free thyroxine (T4)	9-18 pmol/l
Total thyroxine (T4)	70-140 nmol/l
Amylase	70-300 u/l
Uric acid	0.18-0.48 mmol/l

Arterial blood gases

pH	7.35 - 7.45
pCO2	4.5 - 6.0 kPa
pO2	10 - 14 kPa

Lipids

Desirable lipid values depend on other risk factors for cardiovascular disease, below is just a guide:

Total cholesterol	< 5 mmol/l
Triglycerides	< 2 mmol/l
HDL cholesterol	> 1 mmol/l
LDL cholesterol	< 3 mmol/l

Chapter: Ophthalmology

Acute angle closure glaucoma	Notes
Age related macular degeneration	Notes
Angioid retinal streaks	Notes
Anterior uveitis	Notes
Argyll-Robertson pupil	Notes
Blepharitis	Notes
Cataracts	Notes
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Sudden painless loss of vision	Notes
Third nerve palsy	Notes
Tunnel vision	Notes
Wernicke's encephalopathy	Notes

Acute angle closure glaucoma

♦ Glaucoma is a group of disorders characterised by optic neuropathy due, in the majority of patients, to raised intraocular pressure (IOP). It is now recognised that a minority of patients with raised IOP do not have glaucoma and vice versa

♦ In acute angle closure glaucoma (AACG) there is a rise in IOP secondary to an impairment of aqueous outflow. **Factors predisposing to AACG include:**

- hypermetropia (long-sightedness)
- pupillary dilatation
- lens growth associated with age

Features

- severe pain: may be ocular or headache
- decreased visual acuity
- symptoms worse with mydriasis (e.g. watching TV in a dark room)
- hard, red eye
- haloes around lights
- semi-dilated non-reacting pupil
- corneal oedema results in dull or hazy cornea
- systemic upset may be seen, such as nausea and vomiting and even abdominal pain

Management

- urgent referral to an ophthalmologist
- management options include reducing aqueous secretions with acetazolamide and inducing pupillary constriction with topical pilocarpine

External Links

[Patient.info](#)

Acute angle closure glaucoma review

Age related macular degeneration

♦ Age-related macular degeneration is the most common cause of blindness in the UK. Degeneration of the central retina (macula) is the key feature with changes usually bilateral.

♦ Traditionally two forms of macular degeneration are seen:

- dry (geographic atrophy) macular degeneration: characterised by drusen - yellow round spots in Bruch's membrane
- wet (exudative, neovascular) macular degeneration: characterised by choroidal neovascularisation. Leakage of serous fluid and blood can subsequently result in a rapid loss of vision. Carries worst prognosis

Recently there has been a move to a more updated classification:

- early age-related macular degeneration (non-exudative, age-related maculopathy): drusen and alterations to the retinal pigment epithelium (RPE)
- late age-related macular degeneration (neovascularisation, exudative)

Risk factors

- age: most patients are over 60 years of age
- smoking
- family history
- more common in Caucasians
- high cumulative sunlight exposure
- female sex

Features

- reduced visual acuity: 'blurred', 'distorted' vision, central vision is affected first. Straight lines may appear crooked or wavy
- central scotomas
- fundoscopy: drusen, pigmentary changes

Investigation and diagnosis

- optical coherence tomography: provide cross-sectional views of the macula
- if neovascularisation is present fluorescein angiography is performed

General management

- NICE guidance suggests referring patients with suspected macular degeneration for ophthalmological assessment within 1 week
- stop smoking
- high dose of beta-carotene, vitamins C and E, and zinc may help to slow down visual loss for patients with established macular degeneration. Supplements should be avoided in smokers due to an increased risk of lung cancer

Dry macular degeneration - no current medical treatments

Wet macular degeneration

- photocoagulation
- photodynamic therapy
- anti-vascular endothelial growth factor (anti-VEGF) treatments: intravitreal ranibizumab

External Links

[Webvision](#)

Age related macular degeneration fundoscopy findings

Angioid retinal streaks

Angioid retinal streaks are seen on fundoscopy as irregular dark red streaks radiating from the optic nerve head. They are caused by degeneration, calcification and breaks in Bruch's membrane .

Causes

- pseudoxanthoma elasticum
 - Ehler-Danlos syndrome
 - Paget's disease
 - sickle-cell anaemia
 - acromegaly
-

Anterior uveitis

Anterior uveitis is one of the important differentials of a red eye. It is also referred to as iritis.

Features

- acute onset
- ocular discomfort & pain (may increase with use)
- pupil may be irregular and small
- photophobia (often intense)
- blurred vision
- red eyes
- lacrimation
- ciliary flush
- hypopyon; describes pus and inflammatory cells in the anterior chamber, often resulting in a visible fluid level
- visual acuity initially normal → impaired

Associated conditions

- ankylosing spondylitis
- reactive arthritis
- ulcerative colitis, Crohn's disease
- Behcet's disease

Management

- urgent review by ophthalmology
- cycloplegics (dilates the pupil which helps to relieve pain and photophobia) e.g. Atropine, cyclopentolate
- steroid eye drops

Argyll-Robertson pupil

Argyll-Robertson pupil is one of the classic pupillary syndrome. It is sometimes seen in neurosyphilis and is often said to be the prostitute's pupil - accommodates but doesn't react... Another mnemonic used for the Argyll-Robertson Pupil (ARP) is Accommodation Reflex Present (ARP) but Pupillary Reflex Absent (PRA)

Features

- small, irregular pupils
- no response to light but there is a response to accommodate

Causes

- diabetes mellitus
- syphilis

External Links

[Stanford Medicine](#)

Pupillary Control: The Basics

Blepharitis

Blepharitis is inflammation of the eyelid margins. It may be due to either meibomian gland dysfunction (common, posterior blepharitis) or seborrhoeic dermatitis/staphylococcal infection (less common, anterior blepharitis). Blepharitis is also more common in patients with rosacea.

The meibomian glands secrete oil on to the eye surface to prevent rapid evaporation of the tear film. Any problem affecting the meibomian glands (as in blepharitis) can hence cause drying of the eyes which in turn leads to irritation.

Features

- symptoms are usually bilateral
- grittiness and discomfort, particularly around the eyelid margins
- eyes may be sticky in the morning
- eyelid margins may be red. Swollen eyelids may be seen in staphylococcal blepharitis
- stytes and chalazions are more common in patients with blepharitis
- secondary conjunctivitis may occur

Management

- softening of the lid margin using hot compresses twice a day
- mechanical removal of the debris from lid margins - cotton wool buds dipped in a mixture of cooled boiled water and baby shampoo is often used*
- artificial tears may be given for symptom relief in people with dry eyes or an abnormal tear film

*an alternative is sodium bicarbonate, a teaspoonful in a cup of cooled water that has recently been boiled

External Links

[Clinical Knowledge Summaries](#)

Blepharitis guidelines

Cataracts

Majority

- age related
- UV light

Systemic

- diabetes mellitus
- steroids
- infection (congenital rubella)
- metabolic (hypocalcaemia, galactosaemia)
- myotonic dystrophy, Down's syndrome

Ocular

- trauma
- uveitis
- high myopia
- topical steroids

Classification

- **Nuclear:** change lens refractive index, common in old age
- **Polar:** localized, commonly inherited, lie in the visual axis
- **Subcapsular:** due to steroid use, just deep to the lens capsule, in the visual axis
- **Dot opacities:** common in normal lenses, also seen in diabetes and myotonic dystrophy



A hypermature age-related cortico-nuclear cataract with a brunescent (brown) nucleus.
Credit National Eye Institute, National Institutes of Health.

Charles Bonnet syndrome

Charles Bonnet syndrome (CBS) is characterised by persistent or recurrent complex hallucinations (usually visual or auditory), occurring in clear consciousness. This is generally against a background of visual impairment (although visual impairment is not mandatory for a diagnosis). Insight is usually preserved. This must occur in the absence of any other significant neuropsychiatric disturbance.

Risk factors include:

- Advanced age
- Peripheral visual impairment
- Social isolation
- Sensory deprivation
- Early cognitive impairment

CBS is equally distributed between sexes and does not show any familial predisposition. The most common ophthalmological conditions associated with this syndrome are age-related macular degeneration, followed by glaucoma and cataract.

Well-formed complex visual hallucinations are thought to occur in 10-30 percent of individuals with severe visual impairment. Prevalence of CBS in visually impaired people is thought to be between 11 and 15 percent.

Around a third find the hallucinations themselves an unpleasant or disturbing experience. In a large study published in the British Journal of Ophthalmology, 88% had CBS for 2 years or more, resolving in only 25% at 9 years (thus it is not generally a transient experience).

Cox (2014) Negative outcome Charles Bonnet Syndrome. Br J Ophthalmol.

Herpes simplex keratitis

Herpes simplex keratitis most commonly presents with a dendritic corneal ulcer

Features

- red, painful eye
- photophobia
- epiphora
- visual acuity may be decreased
- fluorescein staining may show an epithelial ulcer

Management

- immediate referral to an ophthalmologist
- topical aciclovir

Herpes zoster ophthalmicus

Herpes zoster ophthalmicus (HZO) describes the reactivation of the varicella zoster virus in the area supplied by the ophthalmic division of the trigeminal nerve. It accounts for around 10% of case of shingles.

Features

- vesicular rash around the eye, which may or may not involve the actual eye itself
- Hutchinson's sign: rash on the tip or side of the nose. Indicates nasociliary involvement and is a strong risk factor for ocular involvement

Management

- oral antiviral treatment for 7-10 days, ideally started within 72 hours. Topical antiviral treatment is not given in HZO
- oral corticosteroids may reduce the duration of pain but do not reduce the incidence of post-herpetic neuralgia
- ocular involvement requires urgent ophthalmology review.

Complications

- ocular: conjunctivitis, keratitis, episcleritis, anterior uveitis
- ptosis
- post-herpetic neuralgia

Holmes-Adie pupil

Holmes-Adie pupil is a benign condition most commonly seen in women. It is one of the differentials of a dilated pupil.

Overview

- unilateral in 80% of cases
- dilated pupil
- once the pupil has constricted it remains small for an abnormally long time
- slowly reactive to accommodation but very poorly (if at all) to light

Holmes-Adie syndrome

- association of Holmes-Adie pupil with absent ankle/knee reflexes

Homocystinuria

Homocystinuria is a rare autosomal recessive disease caused by deficiency of cystathionine beta synthase. This results in an accumulation of homocysteine which is then oxidized to homocystine.

Features

- often patients have fine, fair hair
- musculoskeletal: may be similar to Marfan's - arachnodactyly etc
- neurological patients may have learning difficulties, seizures
- ocular: downwards (inferonasal) dislocation of lens
- increased risk of arterial and venous thromboembolism
- also malar flush, livedo reticularis

Diagnosis is made by the cyanide-nitroprusside test, which is also positive in cystinuria

Treatment is vitamin B6 (pyridoxine) supplements

External Links

[Patient.info](#)

Homocystinuria review

Keratitis

Keratitis describes inflammation of the cornea. There are a variety of causes:

Features

- red eye: pain and erythema
- photophobia
- foreign body, gritty sensation
- hypopyon may be seen

Infective

- viral: herpes simplex keratitis
- bacterial: typically *Staphylococcus aureus*. *Pseudomonas aeruginosa* is seen in contact lens wearers
- fungal
- amoebic: acanthamoebic keratitis
- parasitic: onchocercal keratitis ('river blindness')

Enviromental

- photokeratitis: e.g. welder's arc eye
- exposure keratitis
- contact lens acute red eye (CLARE)

Lacrimal duct problems

Dacryocystitis is infection of the lacrimal sac

Features

- watering eye (epiphora)
- swelling and erythema at the inner canthus of the eye

Management is with systemic antibiotics. Intravenous antibiotics are indicated if there is associated periorbital cellulitis

Congenital lacrimal duct obstruction affects around 5-10% of newborns. It is bilateral in around 20% of cases

Features

- watering eye (even if not crying)
- secondary infection may occur

Symptoms resolve in 99% of cases by 12 months of age

Mydriasis

Causes of mydriasis (large pupil)

- third nerve palsy
- Holmes-Adie pupil
- traumatic iridoplegia
- phaeochromocytoma
- congenital

Drug causes of mydriasis

- topical mydriatics: tropicamide, atropine
 - sympathomimetic drugs: amphetamines, cocaine
 - anticholinergic drugs: tricyclic antidepressants
-

Optic atrophy

Optic atrophy is seen as pale, well demarcated disc on fundoscopy. It is usually bilateral and causes a gradual loss of vision*. Causes may be acquired or congenital

Acquired causes

- multiple sclerosis
- papilloedema (longstanding)
- raised intraocular pressure (e.g. glaucoma, tumour)
- retinal damage (e.g. choroiditis, retinitis pigmentosa)
- ischaemia
- toxins: tobacco amblyopia, quinine, methanol, arsenic, lead
- nutritional: vitamin B1, B2, B6 and B12 deficiency

Congenital causes

- Friedreich's ataxia
- mitochondrial disorders e.g. Leber's optic atrophy
- DIDMOAD - the association of cranial Diabetes Insipidus, Diabetes Mellitus, Optic Atrophy and Deafness (also known as Wolfram's syndrome)

*strictly speaking optic atrophy is a descriptive term, it is the optic neuropathy that results in visual loss

Optic neuritis

Causes

- multiple sclerosis
- diabetes
- syphilis

Features

- unilateral decrease in visual acuity over hours or days
- poor discrimination of colours, 'red desaturation'
- pain worse on eye movement
- relative afferent pupillary defect
- central scotoma

Management

- high-dose steroids
- recovery usually takes 4-6 weeks

Prognosis

- MRI: if > 3 white-matter lesions, 5-year risk of developing multiple sclerosis is c. 50%
-

Primary open-angle glaucoma

Glaucoma is a group disorders characterised by optic neuropathy due, in the majority of patients, to raised intraocular pressure (IOP). It is now recognised that a minority of patients with raised IOP do not have glaucoma and vice versa

Primary open-angle glaucoma (POAG, also referred to as chronic simple glaucoma) is present in around 2% of people older than 40 years. Other than age, **risk factors include:**

- family history
- black patients
- myopia
- hypertension
- diabetes mellitus

POAG may present insidiously and for this reason is often detected during routine optometry appointments. **Features may include**

- peripheral visual field loss - nasal scotomas progressing to 'tunnel vision'
- decreased visual acuity
- optic disc cupping

External Links

[NICE](#)

2009 Glaucoma guidelines

Primary open-angle glaucoma: management

The majority of patients with primary open-angle glaucoma are managed with eye drops. These aim to lower intra-ocular pressure which in turn has been shown to prevent progressive loss of visual field.

Medication	Mode of action	Notes
Prostaglandin analogues (e.g. Latanoprost)	Increases uveoscleral outflow	Once daily administration Adverse effects include brown pigmentation of the iris
Beta-blockers (e.g. Timolol)	Reduces aqueous production	Should be avoided in asthmatics and patients with heart block
Sympathomimetics (e.g. brimonidine, an alpha2-adrenoceptor agonist)	Reduces aqueous production and increases outflow	Avoid if taking MAOI or tricyclic antidepressants Adverse effects include hyperaemia
Carbonic anhydrase inhibitors (e.g. Dorzolamide)	Reduces aqueous production	Systemic absorption may cause sulphonamide-like reactions
Miotics (e.g. pilocarpine, a muscarinic receptor agonist)	Increases uveoscleral outflow	Adverse effects included a constricted pupil, headache and blurred vision

Surgery in the form of a trabeculectomy may be considered in refractory cases.

External Links

[NICE](#)

2009 Glaucoma guidelines

[Clinical Knowledge Summaries](#)

Glaucoma guidelines

Red eye

There are many possible causes of a red eye. It is important to be able to recognise the causes which require urgent referral to an ophthalmologist. Below is a brief summary of the key distinguishing features

Acute angle closure glaucoma

- severe pain (may be ocular or headache)
- decreased visual acuity, patient sees haloes
- semi-dilated pupil
- hazy cornea

Anterior uveitis

- acute onset
- pain
- blurred vision and photophobia
- small, fixed oval pupil, ciliary flush

Scleritis

- severe pain (may be worse on movement) and tenderness
- may be underlying autoimmune disease e.g. rheumatoid arthritis

Conjunctivitis

- purulent discharge if bacterial, clear discharge if viral

Subconjunctival haemorrhage

- history of trauma or coughing bouts

Relative afferent pupillary defect

Also known as the Marcus-Gunn pupil, a relative afferent pupillary defect is found by the 'swinging light test'. It is caused by a lesion anterior to the optic chiasm i.e. optic nerve or retina

Causes

- retina: detachment
- optic nerve: optic neuritis e.g. multiple sclerosis

Pathway of pupillary light reflex

- afferent: retina → optic nerve → lateral geniculate body → midbrain
- efferent: Edinger-Westphal nucleus (midbrain) → oculomotor nerve

External Links

[almostadoctor](#)

Relative afferent pupillary defect tutorial

Retinitis pigmentosa

Retinitis pigmentosa primarily affects the peripheral retina resulting in tunnel vision

Features

- night blindness is often the initial sign
- tunnel vision due to loss of the peripheral retina (occasionally referred to as funnel vision)
- fundoscopy: black bone spicule-shaped pigmentation in the peripheral retina, mottling of the retinal pigment epithelium

Associated diseases

- Refsum disease: cerebellar ataxia, peripheral neuropathy, deafness, ichthyosis
- Usher syndrome
- abetalipoproteinemia
- Lawrence-Moon-Biedl syndrome
- Kearns-Sayre syndrome
- Alport's syndrome



Image sourced from [Wikipedia](#)



Fundus showing changes secondary to retinitis pigmentosa

Rheumatoid arthritis: ocular manifestations

Ocular manifestations of rheumatoid arthritis are common, with 25% of patients having eye problems

Ocular manifestations

- keratoconjunctivitis sicca (most common)
- episcleritis (erythema)
- scleritis (erythema and pain)
- corneal ulceration
- keratitis

Iatrogenic

- steroid-induced cataracts
- chloroquine retinopathy

Sudden painless loss of vision

The most common causes of a sudden painless loss of vision are as follows:

- ischaemic optic neuropathy (e.g. temporal arteritis or atherosclerosis)
- occlusion of central retinal vein
- occlusion of central retinal artery
- vitreous haemorrhage
- retinal detachment

Ischaemic optic neuropathy

- may be due to arteritis (e.g. temporal arteritis) or atherosclerosis (e.g. hypertensive, diabetic older patient)
- due to occlusion of the short posterior ciliary arteries, causing damage to the optic nerve
- altitudinal field defects are seen

Central retinal vein occlusion

- incidence increases with age, more common than arterial occlusion
- causes: glaucoma, polycythaemia, hypertension
- severe retinal haemorrhages are usually seen on fundoscopy

Central retinal artery occlusion

- due to thromboembolism (from atherosclerosis) or arteritis (e.g. temporal arteritis)
- features include afferent pupillary defect, 'cherry red' spot on a pale retina

Vitreous haemorrhage

- causes: diabetes, bleeding disorders
- features may include sudden visual loss, dark spots

Retinal detachment

- features of vitreous detachment, which may precede retinal detachment, include flashes of light or floaters (see below).

Chapter: Ophthalmology

Differentiating posterior vitreous detachment, retinal detachment and vitreous hemorrhage

Posterior vitreous detachment	Retinal detachment	Vitreous haemorrhage
Flashes of light (photopsia) - in the peripheral field of vision Floaters, often on the temporal side of the central vision	Dense shadow that starts peripherally progresses towards the central vision A veil or curtain over the field of vision Straight lines appear curved Central visual loss	Large bleeds cause sudden visual loss Moderate bleeds may be described as numerous dark spots Small bleeds may cause floaters

External Link

[American Academy of Ophthalmology](#)

Central Retinal Artery Occlusion

[American Academy of Ophthalmology](#)

Central Retinal Vein Occlusion

Third nerve palsy

Features

- eye is deviated 'down and out'
- ptosis
- pupil may be dilated (sometimes called a 'surgical' third nerve palsy)

Causes

- diabetes mellitus
- vasculitis e.g. temporal arteritis, SLE
- false localizing sign* due to uncal herniation through tentorium if raised ICP
- posterior communicating artery aneurysm (pupil dilated)
- cavernous sinus thrombosis
- Weber's syndrome: ipsilateral third nerve palsy with contralateral hemiplegia -caused by midbrain strokes
- other possible causes: amyloid, multiple sclerosis
*this term is usually associated with sixth nerve palsies but it may be used for a variety of neurological presentations

Tunnel vision

Tunnel vision is the concentric diminution of the visual fields

Causes

- papilloedema
- glaucoma
- retinitis pigmentosa
- choroidoretinitis
- optic atrophy secondary to tabes dorsalis
- hysteria

Wernicke's encephalopathy

Wernicke's encephalopathy is a neuropsychiatric disorder caused by thiamine deficiency which is most commonly seen in alcoholics. Rarer causes include: persistent vomiting, stomach cancer, dietary deficiency. A classic triad of nystagmus, ophthalmoplegia and ataxia may occur. In Wernicke's encephalopathy petechial haemorrhages occur in a variety of structures in the brain including the mamillary bodies and ventricle walls

Features

- nystagmus (the most common ocular sign)
- ophthalmoplegia
- ataxia
- confusion, altered GCS
- peripheral sensory neuropathy

Investigations

- decreased red cell transketolase
- MRI

Treatment is with urgent replacement of thiamine

Relationship with Korsakoff syndrome

If not treated Korsakoff's syndrome may develop as well. This is termed Wernicke-Korsakoff syndrome and is characterised by the addition of antero- and retrograde amnesia and confabulation in addition to the above symptoms.

